



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,072	12/05/2001	Shaun Clem	6979-0009	8815

33356 7590 03/03/2006  
SoCAL IP LAW GROUP LLP  
310 N. WESTLAKE BLVD. STE 120  
WESTLAKE VILLAGE, CA 91362

EXAMINER

MOORE JR, MICHAEL J

ART UNIT PAPER NUMBER

2666

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/006,072	CLEM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael J. Moore, Jr.	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because of the following informalities: Currently, Figures 1-5 contain some elements in handwritten form, which are unclear. It is suggested by Examiner that a more formal version of these drawings be submitted in response to this Office Action. In Applicant's remarks to the previous Office Action, it is stated that substitute formal drawings are enclosed. However, these substitute drawings do not appear to be present.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The amendments made by Applicant to obviate the objections made to the specification in the previous Office Action are proper and have been entered. These objections have been withdrawn.

### ***Claim Objections***

2. Claims **5, 10, 15, 20, and 21** are objected to because of the following informalities:

Regarding claim **5**, on line 3, a "colon" is needed after the word "comprising". Lastly, on line 8, a "semicolon" is needed after the word "ports".

Regarding claim **10**, on line 3, a "colon" is needed after the word "comprising". On line 7, a "semicolon" is needed after the word "direction". Lastly, on line 9, a "semicolon" is needed after the word "ports".

Regarding claim **15**, on line 3, a "colon" is needed after the word "comprising". On line 7, a "semicolon" is needed after the word "direction". On line 9, a "semicolon" is needed after the word "ports". Lastly, on line 2, the phrase "the process comprising" should be "the apparatus comprising" since this is an apparatus claim.

Regarding claim **20**, on line 3, a "colon" is needed after the word "comprising". On line 4, a "semicolon" is needed after the word "frame". On line 5, a "semicolon" is needed after the word "switch". On line 8, a "semicolon" is needed after the word "ring". Lastly, on line 9, a "semicolon" is needed after the word "identifier".

Regarding claim **21**, on line 2, a "period" is needed at the end of this claim.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims **5, 6, 8-11, 13-16, and 18-24** are rejected under 35 U.S.C. 102(e) as being anticipated by Dai et al. (U.S. 6,658,016) (“Dai”). *Dai* teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim **5**, “a switching apparatus for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities” is anticipated by packet switching fabric 10 (switching apparatus) of Figure 1 that transmits bursts of data (frames) as well as control messaging (messages) as spoken of on column 6, lines 27-51.

“A ring of plural data ports comprising input ports and output ports, wherein each data port is interconnected to two adjacent data ports, the ring defining for any given pairing of one input port and one output port a set of zero or more intermediate data ports in a given direction, the ring for passing the messages received at the input ports through any respective intermediate ports to designated output ports” is anticipated by control ring 25 (ring of plural data ports) of Figure 1 that connects control ring input ports

Art Unit: 2666

22 (input ports) and control ring output ports 26 (output ports) that are used for receiving and transmitting control messages (messages) as spoken of on column 6, lines 41-51.

“A crossbar for switching the frames from the input ports to the output ports” is anticipated by packet transfer switching device 12 (crossbar) of Figure 1 that switches data from data ring input port 16 to data ring output port 20 as spoken of on column 6, lines 36-41.

Lastly, “wherein the frames and messages are processed simultaneously” is anticipated by the transmitting of control messages via control ring 25 to manage bandwidth resources of data ring segments 18 of data ring 19 as data is transferred via the data ring as spoken of on column 8, line 63 – column 9, line 4.

Regarding claim 6, “a parser for separating the frames from the messages to form two separate data streams” is anticipated by packet transfer switching device 12 (parser) of Figure 1 that forwards data packets onward via Ethernet links 15 while forwarding control messages onward via control ring segments 24.

Regarding claim 8, “plural gates respectively associated with each data port for allowing a given message into a given data port only if no other data is present in the given data port” is anticipated by control ring processing circuit 60 (gate) of Figure 2A within packet transfer switching devices 12 of Figure 1 that receives and processes control messages as spoken of on column 8, line 62 – column 9, line 4.

Regarding claim 9, “a controller for preventing conflict between message passing on the ring and switching by the crossbar” is anticipated by destination managing unit 74 (controller) of Figure 2A that arbitrates between competing requests for network port

access as well as monitoring the availability of buffer space in the transmit buffer queues 80 as spoken of on column 10, lines 1-30.

Regarding claim 10, “a process for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities” is anticipated by packet switching fabric 10 of Figure 1 that transmits bursts of data (frames) as well as control messaging (messages) as spoken of on column 6, lines 27-51.

“Interconnecting plural data ports in a ring, the data ports comprising input ports and output ports, wherein each data port is interconnected to two adjacent ports, the ring defining for any given pairing of one input port and one output port a set of zero or more intermediate data ports in a given direction” and “passing the messages received at the input ports around the ring through any respective intermediate ports to designated output ports” is anticipated by control ring 25 (ring of plural data ports) of Figure 1 that connects control ring input ports 22 (input ports) and control ring output ports 26 (output ports) that are used for receiving and transmitting control messages (messages) via the control ring 25 as spoken of on column 6, lines 41-51.

Lastly, “simultaneously with passing the messages, switching the frames from the input ports to the output ports via a crossbar” is anticipated by the transmitting of control messages (messages) via control ring 25 to manage bandwidth resources of data ring segments 18 of data ring 19 as data (frames) is transferred via the data ring and packet transfer switching devices 12 (crossbars) as spoken of on column 8, line 63 – column 9, line 4.

Regarding claim **11**, “separating the frames from the messages to form two separate data streams” is anticipated by packet transfer switching device 12 of Figure 1 that forwards data packets onward via Ethernet links 15 while forwarding control messages onward via control ring segments 24.

Regarding claim **13**, “allowing a given message into a given data port only if no other data is present in the given data port” is anticipated by control ring processing circuit 60 of Figure 2A within packet transfer switching devices 12 of Figure 1 that receives and processes control messages as spoken of on column 8, line 62 – column 9, line 4.

Regarding claim **14**, “preventing conflict between message passing on the ring and switching” is anticipated by destination managing unit 74 of Figure 2A that arbitrates between competing requests for network port access as well as monitoring the availability of buffer space in the transmit buffer queues 80 as spoken of on column 10, lines 1-30.

Regarding claim **15**, “apparatus for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities” is anticipated by packet switching fabric 10 (apparatus) of Figure 1 that transmits bursts of data (frames) as well as control messaging (messages) as spoken of on column 6, lines 27-51.

“Means for interconnecting plural data ports in a ring, the data ports comprising input ports and output ports, wherein each data port is interconnected to two adjacent ports, the ring defining for any given pairing of one input port and one output port a set



of zero or more intermediate data ports in a given direction” and “means for passing the messages received at the input ports around the ring through any respective intermediate ports to designated output ports” is anticipated by control ring 25 (ring of plural data ports) of Figure 1 that connects control ring input ports 22 (input ports) and control ring output ports 26 (output ports) via packet transfer switching devices 12 (means) that are used for receiving and transmitting control messages (messages) as spoken of on column 6, lines 41-51.

Lastly, “means for, simultaneously with passing the messages, switching the frames from the input ports to the output ports via a crossbar” is anticipated by the transmitting of control messages (messages) via control ring 25 to manage bandwidth resources of data ring segments 18 of data ring 19 as data (frames) is transferred via the data ring and packet transfer switching devices 12 (crossbars) as spoken of on column 8, line 63 – column 9, line 4.

Regarding claim **16**, “means for separating the frames from the messages to form two separate data streams” is anticipated by packet transfer switching device 12 (means) of Figure 1 that forwards data packets onward via Ethernet links 15 while forwarding control messages onward via control ring segments 24.

Regarding claim **18**, “means for allowing a given message into a given data port only if no other data is present in the given data port” is anticipated by control ring processing circuit 60 (means) of Figure 2A within packet transfer switching devices 12 of Figure 1 that receives and processes control messages as spoken of on column 8, line 62 – column 9, line 4.

Regarding claim **19**, “means for preventing conflict between message passing on the ring and switching” is anticipated by destination managing unit 74 (means) of Figure 2A that arbitrates between competing requests for network port access as well as monitoring the availability of buffer space in the transmit buffer queues 80 as spoken of on column 10, lines 1-30.

Regarding claim **20**, “a process for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities” is anticipated by packet switching fabric 10 of Figure 1 that transmits bursts of data (frames) as well as control messaging (messages) as spoken of on column 6, lines 27-51.

“Determining whether a data packet is a message or frame” is anticipated by the reception of data (frames) via input port 44 and control messages (messages) via input port 48 of management device 42 of Figure 1 as spoken of on column 7, lines 1-12.

“If the data packet is a frame, then routing the frame through a crossbar switch” is anticipated by the transmission of data via packet transfer switching devices 12 (crossbars) and data ring 19 of Figure 1 as spoken of on column 6, lines 36-41.

“If the data packet is a message, then inserting the message into one of a plurality of ports, wherein the ports are interconnected in a ring” is anticipated by the transmission of control messages via control ring 25 (ring) of Figure 1 containing control ring input ports 22 and control ring output ports 26.

“Giving the message a message ring destination identifier” is anticipated by the destination device ID field (identifier) of control messages transmitted via control ring output ports 26 as spoken of on column 9, lines 15-23.

Lastly, “passing the message from port to port until the message reaches a destination port” is anticipated by the transmission of control messages via control ring 25 (ring) of Figure 1 containing control ring input ports 22 and control ring output ports 26 as spoken of on column 9, lines 15-26.

Regarding claim **21**, “if the data packet is a message, then placing the message in a message-in queue” is anticipated by the reception of control messages by control ring processing circuit 60 (message-in queue) of Figure 2A via control ring input port 22 as spoken of on column 9, lines 15-26.

Regarding claim **22**, “wherein the message-in queue comprises a FIFO” is anticipated by the reception of control messages by control ring processing circuit 60 (message-in queue) of Figure 2A via control ring input port 22 as spoken of on column 9, lines 15-26.

Regarding claim **23**, “after the message reaches the destination port, placing the message in a message-out queue” is anticipated by the reception of control messages by control ring processing circuit 60 (message-out queue) of Figure 2A via control ring input port 22 as spoken of on column 9, lines 15-26.

Regarding claim **24**, “wherein the message-out queue comprises a FIFO” is anticipated by the reception of control messages by control ring processing circuit 60

Art Unit: 2666

(message-out queue) of Figure 2A via control ring input port 22 as spoken of on column 9, lines 15-26.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims **7, 12, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai et al. (U.S. 6,658,016) ("Dai") in view of Szczepanek et al. (U.S. 6,621,818) ("Szczepanek").

Regarding claims **7, 12, and 17**, *Dai* teaches the apparatus of claim **5**, the process of claim **10**, and the apparatus of claim **15**, respectively. *Dai* does not teach a clock for moving the messages by one data port for every clock pulse.

However, *Szczepanek* teaches a ring configuration of network switches where a clock signal is provided by a transmitting ring port to a receiving switch as spoken of on column 13, lines 33-40.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the clock signal of *Szczepanek* with the apparatus of *Dai* in order to provide synchronous receipt of data signals at the receiving switch as spoken of on column 13, lines 33-40 of *Szczepanek*.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims **5-24** have been considered but are moot in view of the new ground(s) of rejection provided above.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carlson et al. (U.S. 6,728,206) is another reference considered pertinent to this application.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2666

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:30am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Moore, Jr.  
Examiner  
Art Unit 2666

mjm MM

*Seema S. Rao*  
SEEMA S. RAO 2/27/06  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800